TWENTY-THIRD

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

URBAN SANITARY AUTHORITY

OF THE

CITY OF WORCESTER.

YEAR 1896.

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The Twenty-third Annual Report of the Medical Officer of Health, being for the year 1896.

TO THE URBAN SANITARY AUTHORITY
OF THE CITY OF WORCESTER.

Gentlemen,

I have the honour to lay before you my Report for the year 1896, containing an account of the general sanitary condition of the City, of the measures that have been taken to improve that condition, to check the spread of infectious diseases and to improve the health of the City so far as good sanitation will conduce to that end.

This year will be marked in the medical history of the City as being the first in which Diphtheria has been epidemic within it. It is a great misfortune, for it would be taking a most optimistic view to expect that the City will be as free of this fatal disease in the future as it has been in the past. A detailed account of the epidemic will be found in the following pages.

The population of the City in the middle of 1896 is estimated at 44,250. The natural increase of the population, or the excess of births over deaths during the year was 485.

The Birth-rate was 29·6 per 1000 living, which is practically the same as the average of the past decade. (Table V.) The Birth-rate for England and Wales for 1896 was 29·7, which is lower than any other year on record except 1894, and is 1·3 per 1000 below the mean rate of the 10 years 1886-95.

The Death-rate was 18·6, which is 1·0 per 1000 lower than the average Death-rate of the preceding 10 years, (Table V.) The Death-rate for England and Wales was 17·1, which is also lower than the rate in any previous year excepting 1894.

The Infantile Death-rate was 163 per 1000 births registered during the same period. In only one year (1894) during the last 10 years has there been a lower Infantile Death-rate. The rate for England and Wales for 1896 was 148, which was also the mean proportion in the 10 years 1886-95.

The Death-rate from the seven principal Zymotic diseases was 2·6, which is ·9 in excess of the average of the past 10 years. The rate for England and Wales was 2·18.

The Death-rate from	Measles was	·63
” ” ”	Scarlet Fever was	·06
” ” ”	Diphtheria was	1·1
” ” ”	Whooping Cough was	·15
” ” ”	“Fever” was	·09
” ” ”	Diarrhœa was	·61
” ” ”	Cancer was	·63
” ” ”	Phthisis was	1·03
” ” ”	All forms of Tubercle was	1·9

As in previous years, in estimating the Death-rate there have been included the deaths of 16 inmates of Powick Asylum who went there from the City, and the deaths of persons dying in the General Infirmary who came from outside the City, 25 in number, have been excluded.

The following Table taken from the Report of the Registrar-General compares the various Death-rates for 1896 with those of the City. Worcester is one of the “*67 other large towns*,” and its rates should be compared with the figures for these towns.

Annual Death-rates per 1000 from all causes and from several Zymotic diseases during the year 1896:—

	All causes.	Principal Zymotic Diseases (columns 3—9).	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Deaths under 1 year per 1000 Births.
Columns	1	2	3	4	5	6	7	8	9	10
England and Wales ...	17·1	2·18	0·02	0·56	0.18	0·29	0·41	0·17	0·55	148
33 great towns	18·9	2·86	0·00	0·71	0·22	0·38	0·57	0.19	0·79	167
67 other large towns ...	17·3	2·51	0·12	0·64	0·19	0·25	0·43	0.20	0·68	161
England and Wales, less the 100 towns ...	15·8	1·60	0·00	0·43	0·14	0·23	0·30	0·14	0·36	130
Worcester	18·6	2·66	0·00	0.63	0·06	1·10	0·15	0.09	0·61	163

This Table shews that Worcester had in 1896 a higher Death-rate than the 67 large towns by 1·3, and that ·85 of this increase is accounted for by the excess of the Diphtheria Death-rate over that of the 67 large towns.

Inquests were held by the City Coroner in 59 cases, or 7·1 per cent. of the total deaths registered in the City during the year. Of this number death was assigned to natural causes in 20 cases, to accidental causes in 29, to suicide while insane in 4 cases. Inquests were held on the bodies of 12 infants under 1 year of age, of whom 2 were illegitimate; and on 12 other children between the ages of 1 and 7 years, of whom 3 were illegitimate.

THE DIPHTHERIA EPIDEMIC.

A disease closely similar to what we now call Diphtheria was known to the Ancients and described by the Greek Physicians; but this name was given to the disease by a French Physician, Bretonneau, about the year 1820. There had been isolated epidemics in England during the 18th century, but little attention was paid to them, and it was not until the year 1855 that the Registrar-General made a separate heading for the deaths from this disease, which previously had been included with those from Scarlet Fever. The five years from 1855 to 1860 saw an alarming increase in the number of deaths from this disease, the Death-rate per million living having risen from 20 in 1855 to 517 in 1859. The following Table will shew the prevalence of the disease for three decades :—

DIPHTHERIA MORTALITY PER MILLION PERSONS LIVING AT ALL AGES.

Date.	*England and Wales.*	*London.*
1861-70	185	179
1871-80	121	122
1881-90	163	260

The Registrar-General, in his Report on the decade 1881-90, says:—"The mortality from Diphtheria, which throughout England and Wales was in the mean proportion of 163 per million living at all ages, was equal to 168 in urban England and to 159 in the rural districts. It is noteworthy that the rate was considerably lower in the 50 smaller towns than in the rural districts, and very much lower than in the 28 chief towns."

The Death-rate for Worcestershire for this decade was 102, and that for Worcester was 65.

In the text books written some 10 years ago Diphtheria is described as a disease which prevailed in sparsely populated districts rather than in the Cities, and that used to be the case. During these 10 years the Death-rate from Diphtheria in the 28 large towns of England has nearly doubled, and towns that have hitherto been comparatively free from the disease have been invaded during this period. It is not necessary to quote further figures to prove this fact, which is very serious and so far inexplicable.

As regards the City of Worcester, no record of any previous epidemic of Diphtheria can be found. The Reports of your Medical Officer of Health go back to the year 1873. The deaths from this disease from 1873 to 1889 are as follows:—

Year.	*Deaths.*	*Year.*	*Deaths.*
1873	8	1882	2
1874	4	1883	0
1875	3	1884	3
1876	1	1885	0
1877	0	1886	2
1878	7	1887	3
1879	2	1888	3
1880	2	1889	3
1881	0		

In the year 1890 the Infectious Disease (Notification) Act was adopted by your Authority, and from that time the number of cases occurring in the City and the deaths resulting can be compared.

Year.	*Cases of Diphtheria Notified.*	*Deaths.*
1890	10	2
1891	10	2
1892	27	11
1893	39	9
1894	34	7
1895	26	7
1896	317	49

It will be noted that since the year 1892 there has been a distinct increase in the number of cases of Diphtheria and in the number of deaths, but the cases have been sporadic and scattered, no epidemic even of a local character having taken place.

During the first quarter of 1896, 16 cases were notified and 5 deaths occurred. It will be seen in the Table on page 19 how the disease increased and continued through the year.

It is noteworthy that of these 16 cases notified in the first three months of the year 8 were adults, and only 3 were children of school age, and 1 of these contracted the disease elsewhere.

In April, 3 cases only occurred, 2 of them being children attending St. Martin's Infants School.

In May, 11 cases were notified, 8 of them being children attending the same school and 2 others in families from which other members went to this school. On May 13th this school was closed for three weeks by order of the Health Committee, and reassembled on June 3rd; but in the following week fresh cases occurred among the children, and the school was again closed on June 10th for a period of six weeks.

Those acquainted with the topography of the district will understand that of the infant population of the east end of the Arboretum, some go to St. Martin's School and some to the Mixed School of St. Mary's Parish, in Northfield Street, and in this way no doubt the scholars of the latter school became attacked towards the end of June, so that it was found necessary to order the closure of this school for six weeks, beginning on June 27th. From this time the disease spread through most parts of the City, but only one other Parish was especially attacked, namely, that of St. Clement's. The holidays of most of the schools began on July 17th and continued to August 17th. It was thought advisable to order the St. Clement's Schools to remain closed until August 31st, and the Schools of St. Mary's, St. George's and the British Schools, which would have reopened on August 10th, were ordered by your

Authority to remain closed for one week longer, owing to cases of Diphtheria having occurred during the holidays among the scholars who attended these schools. Altogether 21 schools had 155 scholars who suffered from this disease during the whole year, not counting the secondary cases that occurred in the families of those scholars. Those chiefly affected were—St. Martin's Infants School 27 children, St. Martin's Girls School 12, St. Mary's Mixed School 14, British Girls School 11, and St. Clement's School 15; none of the other schools had as many as 10 cases among its scholars throughout the year. In relation to any supposed connection between unwholesome surroundings and Diphtheria, it may be mentioned that only one case occurred among the children attending the Board Schools in Hound's Lane, and it is well known that these children are mostly of the poorest classes and live in the oldest and most unhealthy parts of the City.

In this history of the epidemic in relation to school attendance, it must be understood that it is not suggested that any sanitary defects in the schools themselves were the cause of the spread of the disease among the scholars; but, no doubt, the aggregation of children in schools is the main factor in the spread of this and other infectious diseases.

Altogether 317 cases of Diphtheria were notified during the year, and they were distributed in 254 houses. Of these 122 were males (38·4 per cent.) and 195 were females (61·6 per cent.) In 58 houses the first notified case was of a person not attending school. Of these 58, 20 were under five years of age, and of these 20, 10 died.

Of the children under five years of age who attended school and were attacked, 16 were males and 26 females, and 14 of the 42 died.

The ages of the persons attacked and the deaths occurring in each period were as follows :—

Age—	Under 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.	Total under 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.	
Males ...	...	5	8	19	10	42	48	17	7	8	122
Deaths ...	...	2	2	5	3	12	8	...	...	...	20
Females...	2	8	7	21	16	54	63	36	12	30	195
Deaths ...	1	5	4	6	4	20	7	1	...	...	28
Total......	2	13	15	40	26	96	111	53	19	38	317
Deaths ...	1	7	6	11	7	32	15	1	...	...	48

The Death-rate of the attacked per centum was :—

Persons.			Males.			Females.		
Total.	Under 5 years.	Over 5 years.	Total.	Under 5 years.	Over 5 years.	Total.	Under 5 years.	Over 5 years.
15·1	33·3	7·2	16·4	28·5	10·0	14·3	37·0	5·7

This Death-rate of the attacked would have been thought very low in the days before the use of *antitoxin serum.* In Dr. Thorne Thorne's book on Diphtheria, on page 32 are given the notified attacks and registered deaths from Diphtheria in 15 large towns and cities for the years 1888-9 and 90. The attacks in this Table number 4,845 and the deaths 1,458, giving a Death-rate of the attacked of 30 per cent.

The Death-rate among children under five is very high, and is higher among the females than the males. It will be noted also that a considerably larger number of females were attacked than males. This has been noted in other epidemics, and the above Table shews that it holds good for every age period. The girls at school age are frequently seen with their arms around each other's necks as they walk along the street, and in such close contact the danger of contracting Diphtheria chiefly lies; at ages above school life the nursing of the sick children will account for the excess among the women as compared with the men.

In considering the mortality from this disease, it is interesting to note the time at which death occurred subsequent to notification. In the following Table it is presumed that the medical man notified the disease on the same day on which he first saw it (and this was the rule); and the deaths at home and at the Hospital are separated.

Deaths on Days after Notification of Disease.

	Same day as notified.	1 day after.	2 days after.	3 days after.	4 days after.	5 days after.	6 days after.	7 days after.	7 to 14 days after.	Total.
At home	10	6	3	1	...	1	2	...	7	30
At hospital ...	...	2	1	...	3	...	1	...	10	17

Of the 17 patients 10 were removed to Hospital on the same day as notified, 6 on the next day, and 1 on the third day after notification. It will be seen that of these 47 deaths the medical man had no chance of saving life in two-fifths of the cases, as 18 of the patients died within about 30 hours of being first seen. In the early stages of the epidemic in visiting the houses I was inclined to blame the parents for not having sought medical aid earlier, but more experience proved to me that in many cases the symptoms of the disease were so little obvious to the ordinary observer that the disease made considerable progress before the attention was arrested. This was especially the case in the young children from three to six years; the older ones made complaint earlier, but the little ones took their food in many cases much as usual, and the throat was not suspected as the cause of the malaise.

The steps taken by your Authority to check the disease have been above related as regards school closure. This is a disease in which distinctly good results are obtained by this measure. My experience goes to show that it is not the pronounced cases of Diphtheria that spread the disease, but those ill-defined sore throats seldom seen by the medical man. It may be said that the recent development of the science of bacteriology has explained what was previously a mystery. The bacillus of the disease may inhabit a person's throat and yet cause few or no signs of what is known clinically as Diphtheria ; or the disease may be so slight as that its true nature may be unsuspected. The individual so lightly affected goes about and gives the disease to another, who suffers severely. In many households where a child under school age was the first notified, it was found that one or more of the other children who were going to school had had slight sore throats in the previous week, and this was no doubt the origin of the disease which was first recognised in the younger child. It is easy to see that this feature of the disease makes its control very difficult, and the circular letter to the schoolmasters and mistresses, which the Health Committee sent to all the schools in the City, said " the greatest care should be exercised in seeing that no child is allowed to attend a Day School or Sunday School who has the least sign of sore throat. All sore throats, especially at the present time, should be viewed with the greatest suspicion." Here it may be said that the clergy and ministers of religion in charge of the Sunday Schools in the affected districts readily agreed to the suggestion of the Health Committee that the Sunday Schools should be closed for a few weeks, until the disease had subsided. Besides the circulars to the schools, a Handbill was posted through the City warning of the dangers of infection from Diphtheria, and was also circulated through the community by means of the school children.

As many of the sufferers as could be accommodated were removed to the Barbourne Hospital. Altogether 137 cases were treated there, with 17 deaths, giving a Death-rate of 12·4 per cent. It was very anxious and trying work nursing and treating these cases, many of whose throats were highly offensive and needed the most constant attention day and night.

Your Authority gave me permission in 1895 to have bacteriological examinations made of the cases treated in the Hospital, and also to make use of the *antitoxin serum*. Without going into too strictly medical matters, the following facts are of interest :—Of the 137 cases treated, bacteriological examination was made in 127, in all instances by the British Institute of Preventive Medicine. Of these 127 cases, 107 were said to have the bacillus Diphtheriæ in their throats, and in the 20 others this bacillus was not found. Of these 20, 9 had not the clinical symptoms of Diphtheria, and were sent home again as soon as possible ; all of them had been treated with the *antitoxin serum*, and did not after discharge develop Diphtheria.

As regards the value of the *antitoxin serum*, I cannot speak too highly. The remarkable improvement that took place in the condition of many of the children about 24 hours after the injection of the *serum* was such as I have never seen follow any other method of treatment. The *serum* used was that supplied by the British Institute of Preventive Medicine. The drawbacks to the treatment, namely, the temporary pain of the injection and the urticarial rash that frequently appeared on the eighth or ninth day, are as nothing in comparison to the speedy relief of the throat troubles and the absence of the subsequent paralytic sequelæ in those cases in which the injections were given in an early stage of the disease.

Your Authority will naturally be anxious to know if any reasons can be assigned why this fatal disease has spared this City up to the year 1896, and then for the first time became epidemic. There is no explanation that I can offer. It was pointed out on a previous page that the disease has shewn a tendency to increase in the City since 1892. In the neighbouring City of Birmingham this disease assumed an epidemic form in 1895, having been quiescent for more than 20 years previously, and Dr. A. Hill, the Medical Officer of Health, could find no explanation. It is interesting in relation to the causation of the disease to note that the epidemic was preceded by a good deal of sore throat during the first quarter of the year. In my Report for that quarter I wrote as follows :—

" In relation to this unusual incidence of Diphtheria, it may be mentioned that there has been during the quarter a wide-spread epidemic of follicular tonsillitis, which has certainly been of an infectious nature, and has been looked upon by some of the medical men as a form of epidemic influenza chiefly attacking the throat. In several of these cases swabs of the throat were taken, and the bacteriological examination showed that the Diphtheritic bacilli were absent, excepting in two instances."

This is a very common feature in the history of epidemics of Diphtheria. It is very probable that persons with unhealthy throats are more liable to be attacked by the disease than are persons whose throats are healthy. It is from this point of view that insanitary surroundings of any sort predispose to disease, and especially to throat disease. There is no more relation between Diphtheria and bad sanitation than this, and indeed the last ten years has seen vast improvements in the sanitary conditions of our large cities, and yet this has been coincident with a general and progressive increase of Diphtheria in their midst. Contaminated water supplies have never caused Diphtheria, but local epidemics have been traced to infected milk. Some domestic animals are also subject to a disease closely allied to Diphtheria, especially cats and fowls.

The only suggestion I can offer for the increase of Diphtheria during the last four years is the excessive drought that has prevailed during that period, and that consequently our main sewers have been insufficiently flushed. This has resulted in more deposit forming in the old sewers and more sewer gas from these deposits escaping through the surface gratings into the air. But this will not in any way explain the sudden increase of the disease in May and June last. The disease began in and around Pheasant Street. Under this street runs an old sewer which the City Engineer writes me is 4 feet 10 inches high and 3 feet wide, and is egg-shaped; the letter goes on to say:—"This sewer is ventilated, and my foreman tells me he has always found it in good condition whenever he has had occasion to open it." But the ventilators of this sewer are in the middle of the street, and the iron gratings are convenient places for the children playing there to use as starting points in their games. It would be a great gain to the health of the children, who cannot but use these side streets as their playgrounds, if all these surface ventilators could be removed and be replaced by shafts. If a systematic effort were made in such streets to do this much good would ensue and the health of the rising generation be correspondingly improved.

THE INFECTIOUS DISEASE (NOTIFICATION) ACT AND THE MEANS TAKEN FOR CHECKING THE SPREAD OF DISEASE.

During the year 690 cases of infectious disease have been notified. As in all former years, notification of the disease by the householder has been a dead letter.

It will be seen in the following Table that the excess in number of the cases notified is due to the epidemic of Diphtheria; there has also been an epidemic of Scarlet Fever of a mild type, more cases of this disease having been notified than in any previous year since the adoption of the Act.

Prosecution of the parents of a child for allowing the boy to go about the streets while in an infectious condition from Scarlet Fever was ordered by the Health Committee, and the Magistrates inflicted a fine.

The diseases that are scheduled under this Act have been notified during the year as follows :—

Month.	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup	Typhoid Fever.	Continued Fever.	Puerperal Fever.	Erysipelas.	Total.
January ...	...	7	6	1	2	...	1	4	21
February ...	...	14	7	1	...	...	...	2	24
March	1	9	3	...	...	...	1	5	19
April	1	5	3	...	2	...	...	4	15
May	1	6	11	...	...	...	...	5	23
June	1	12	45	...	...	...	...	5	63
July	...	29	62	...	7	...	...	5	101
August......	...	29	32	...	4	...	1	3	69
September .	...	35	35	...	1	...	1	4	76
October ...	...	78	52	...	1	...	...	4	135
November .	...	44	44	1	1	...	1	5	96
December .	...	27	19	...	...	...	...	2	48
Total 1896	4	295	317	3	18	...	5	48	690
„ 1895	1	141	26	...	17	1	3	27	216
„ 1894	63	127	34	...	46	2	6	59	337
„ 1893	13	273	39	...	65	1	9	94	494
„ 1892	1	236	27	...	67	1	6	98	436
„ 1891	...	40	10	...	73	...	6	55	184
„ 1890	...	131	10	...	77	...	7	79	304

In accordance with my practice, I personally enquired into the cases of Smallpox, Diphtheria, Typhoid and Puerperal Fevers during the year, and into such other of the cases as the Inspector desired my help.

Smallpox.—Four cases only of this disease have occurred during the year. The patients were all removed to the Smallpox Hospital. The first case could not be traced at all. The persons who had been in contact with her consented to be revaccinated, and the disease did not spread. The second case was contracted while travelling in South Wales; the third was a sailor, who came here ill from Gloucester; the fourth, his wife, who refused revaccination when it might have saved her from an attack of Smallpox. No death took place.

The City was extremely fortunate to have had so few cases, considering the proximity of Gloucester, where the disease was raging for many months. This fact also speaks highly for the efficacy of the means taken by the Sanitary Authority at Gloucester for preventing the spread of the disease.

The epidemic of Smallpox at Gloucester lead to a considerable amount of revaccination of adults in Worcester. The Health Committee, wishing to do all in their power to increase the protection of the citizens against the disease, with the cordial co-operation of the medical men in the City, offered to any ratepayer free revaccination with calf lymph by any medical man whom the citizen might choose. Only 344 of the citizens availed themselves of this offer, at a cost of £30, but many more were revaccinated privately.

Scarlet Fever.—There has been during the year a mild but widespread epidemic of this disease. No less than 295 cases have been notified, a larger number than in any previous year. Of these 109 were under 5 years of age, and no death occurred; but of the 186 over 5 years of age 3 deaths occurred, 2 at their homes and 1 at the Hospital. The 295 cases were distributed in 236 houses, and only 53 cases could be removed to the Hospital. That this lack of Hospital accommodation was a considerable element in the spread of the disease will appear more probable when the figures are further analysed. In the first quarter of the year 22 cases out of 30 notified were removed to Hospital; in the second quarter 13 cases out of 23 were removed. At the end of June the Hospital was filled with Diphtheria, and only six beds were available for Scarlet Fever up to the middle of December. So, in the third quarter, out of 93 cases notified only 7 were admitted to Hospital; and in the fourth quarter only 11 out of 149 cases notified. This increase of Scarlet Fever in the autumn is a well-known fact of its epidemic character; but in no previous year since the Notification Act has been in force has this feature been anything like so marked.

Typhoid Fever.—Again this year, as in 1895, the number of cases of this disease notified has been much fewer than in former years. The 18 cases occurred in 13 houses, 1 house having 2 cases, another 5 cases. Of the 18 cases, 3 died; 2 at home, 1 at the General Infirmary. Of the causation of these cases, there is little doubt that 2 patients contracted the disease away from Worcester; in the 11 houses where the other cases occurred, minor defects of drainage were found in connection with 5 houses; but in all cases the whole of the drainage was outside the houses. In the instance where 5 cases occurred in members of the same family, the drainage of the row of houses in one of which this family lived was reconstructed by the owners. In connection with this localised outbreak an action for damages due to loss of health from the attack of Typhoid Fever was commenced against your Authority, it being alleged that the drainage was defective and was the cause of the Typhoid Fever, and that your Authority were responsible for this alleged defective drainage; but after two postponements of the action it was finally abandoned.

Puerperal Fever.—During the year 5 cases of this disease were notified, with 1 death. Three of the cases were attended by midwives, and 2 by medical men. There was no connection between the cases. The usual printed notice was sent to each nurse concerned, warning her of the risk of infection.

Besides the diseases notifiable under the above Act, there has been an extensive epidemic of Measles throughout the City, which caused 28 deaths of children, 27 of these being under five years of age. In the Report for the third Quarter of 1896 I gave a summary of a Report on Measles by Dr. Theodore Thompson to the Local Government Board. I was unable to recommend your Authority to add Measles to the list of diseases that should be compulsorily notified, and this chiefly because of the difficulty inherent to the disease, namely, that the most infectious stage is that before the rash appears, and thus before any isolation is effected; and also because of the considerable cost if the attempt to check its spread is made in anything like an adequate manner. Dr. Theodore Thompson could point to no one Sanitary Authority where the action taken had had any marked effect in controlling the disease, and this Dr. Thompson points out was due to the half-hearted manner in which they all went to work, all of them apparently shirking the expenditure of the large sums of money necessary to cope with an epidemic of Measles.

One school was closed for a period of four weeks on account of an outbreak of Measles among the scholars. Three other of the schools in the City applied to the Health Committee for a certificate to enable them to obtain a special grant under Section 101* of the Day School Code for scholars who had been kept away from school on account of Measles or other infectious sickness at their homes. In some cases this application from the School Managers was made only after the epidemic had been in existence some time in the school, and the Committee ordered a circular letter to be addressed to the Managers of the Schools stating that "such applications must be "sent to the Medical Officer immediately the necessity "arises, as the Committee will not be prepared to ante-date "any Order they may think fit to make."

THE ISOLATION (BARBOURNE) HOSPITAL.

The following table shows the admissions during the year 1896, and for the 10 years preceding :—

Year,	Smallpox.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Total.
1886	1	1	17	24	...	43
1887	...	...	8	41	...	49
1888	...	1	10	41	...	52
1889	...	2	17	16	...	35
1890	...	...	22	97	...	119
1891	...	...	20	24	1	45
1892	1	4	9	107	1	122
1893	12	...	8	143	1	164
*1894	8	7	11	45	1	72
1895	...	6	5	79	...	90
Average for 10 years ...	2·2	2·1	12·7	61·7	·4	79·1
1896	...	137	1	53	...	191

*In this year a separate Smallpox Hospital was established.

Two of the patients remained under the care of their own medical man.

Seventeen deaths occurred during the year; 1 from Scarlet Fever and 16 from Diphtheria. One other child, admitted on December 31st suffering from Diphtheria, died on January 1st, 1897.

During the year I paid 421 visits to the Hospital.

The ages of the patients admitted were as follows:—

	Under 5 years.	5 to 10 years.	10 to 20 years.	Over 20 years.
Scarlet Fever	13	20	18	2
Diphtheria	38	55	36	8
Typhoid Fever	...	...	...	1

It will be known to your Authority through the Quarterly Reports that never before has the present Isolation Hospital proved so inadequate as in this year. The epidemics of Scarlet Fever and Diphtheria occurring together made it impossible to deal with both as regards Hospital isolation, and so I advised that the more deadly should be isolated and only the Iron Room reserved for the most urgent cases of Scarlet Fever. This no doubt conduced to the continued spread of the latter disease, and efforts were made to find a suitable house for isolation of the Scarlet Fever patients, but none could be discovered.

The new Isolation Hospital will be erected during the present (1897) year. The restrictions imposed on your Authority by the Local Government Board have caused an increased cost of nearly £2000, chiefly expended on the administrative block. The Board has also insisted on the erection of a wooden fence 6 feet 6 inches in height all around the site, which will in my opinion tend to prejudice the public against allowing their children to go in, by making it look barrack-like and inhospitable.

The Smallpox Hospital was used during the year and 4 patients were isolated there.

A Nurse was reserved in readiness for many months in expectation of cases of Smallpox being imported from Gloucester, but as detailed in a former paragraph only one such case occurred.

The Water Supply.—It is a matter for much regret that no further steps have been taken during the past year to increase the filtering area at the Waterworks. In my Report for 1895 I urged upon your Authority the necessity of doing so, quoting the opinion of your City Engineer that "*the present filtering area is only just sufficient to produce satisfactory results when the river is in comparatively good condition*," and further that the filtering area needs to be increased by 25 per cent., at a cost of £3700. May I again call attention to the great diminution of Typhoid Fever in the City, and connect this happy result with the increase of the filtering area which came into operation in April, 1894. To make this matter clearer, I have prepared a Table of the notifications of Typhoid Fever since the adoption of the Act, the totals of each year and the resulting deaths.

Month.	1890.	1891.	1892.	1893.	1894.	1895.	1896.
January	12	12	5	6	13	1	2
February	4	10	7	8	5	1	...
March	9	4	8	9	8	2	...
April	8	...	5	1	4*	2	2
May	2	5	4	...	2	1	...
June	4	1	...	3	...	2	...
July	1	5	4	8	5	3	7
August	3	1	3	4	6	1	4
September	3	3	1	5	1	3	1
October	7	7	13	9	1	...	1
November	8	12	11	8	1	...	1
December	16	13	6	4	...	1	...
Totals	77	73	67	65	46	17	18
Number of Deaths	10	8	14	9	3	3	4
Number of days during the year when the river water was turbid	37	111	151	75	162	105	55

* Increased filtering area came into operation.

There has been nothing else of a general character affecting the health of the citizens since April, 1894, that I know of which should cause this remarkable change in the incidence of this disease.

It occurred to me that these years have been unusually dry, and that the river might have been much clearer during the past three years than in the preceding four years, so I consulted the records of the City Engineer concerning the state of the river during these seven years, and have added to the Table the number of days in each year during which the river water was "turbid" or "very turbid." These figures shew that the river has been no clearer recently than before the diminution of the disease took place, indeed 1894 had more days of "turbid" water than any other, and this occurred during the last five months of the year, and not in the Spring months.

In my Report for the year 1893 I fully reported on the efficacy of sand filtration, and it might have been foretold that the increase of the filtering area made in 1894 would diminish the amount of Typhoid Fever, *if* the cause of that fever lay in the drinking water. I must confess that I thought it antecedently highly improbable that if the cause of the fever was the drinking water, that only an average of 70 cases a year should occur in a population of 44,000, and I was inclined to blame the local surroundings of the sufferer rather than a general condition such as impure water. But I cannot resist the evidence of the last two-and-a-half years, and think that your authority might still further reduce the incidence of this disease by extending the filtering area to allow of more gradual filtration, and especially at those times when the state of the river is turbid.

Bakehouses.—There are 90 bakehouses on the register. Two new ones have been opened during the year. Seven of the bakehouses were not in use at any time of the year, and seven others were vacant at some time of the year. I paid 246 visits, served formal notices for whitewashing or repairs in seven instances. In 14 of the bakehouses there were "youths" employed, and I have in all cases informed H.M. Inspector of factories as the law directs.

In most cases the bakehouses are well kept. Some are of ancient structure, and tinkering with them will not improve them, the only cure is to pull them down. The commonest fault is the bad ventilation. The means of ventilation are often present, but are so placed that when in use the workers are in a thorough draught, so they prefer the risks of the bad air rather than those of "catching cold."

THE FACTORY AND WORKSHOPS ACTS.

The Factory and Workshops Act, 1895, came into operation on January 1st, 1896. In my Report for the first quarter of 1896 I epitomised the Clauses of this Act that were of general interest.

Section 22 of this Act applied the Factory Acts to Laundries, but it excluded Laundries in which the only persons employed are—

(a) Inmates of any prison, reformatory, &c.

(b) Inmates of an institution conducted in good faith for religious or charitable purposes.

(c) Members of the same families dwelling there,

or in which not more than two persons dwelling elsewhere are employed.

The subsection *(c)* excludes most of the Laundries of the City which are workshops from sanitary control. Only two Laundries have been found which come under the Act, and both were kept in conformity with it.

Under Section 41 of the 1895 Act I received from H.M. Inspector of Factories five notices of the opening of workshops, and inspected the premises which were proposed to be used.

I have inspected many of the workshops of the City during the year and found only one case of overcrowding, which was after some delay abated by a rearrangement of the rooms in which the employees worked.

The present staff of Inspectors is not adequate to properly perform the increased work that has been cast on your Authority during the last few years. This outdoor inspection work takes up so much time because of the distances that have to be travelled, and neither of your two Inspectors have any means of locomotion except on their own feet. It would be very desirable to appoint another Inspector, who should give up his time to the inspection of the Workshops, Common Lodging Houses, Dairies and Milkshops, and Slaughterhouses. It must be remembered that there is no clerk in the Health Office and that all the clerical work has to be done by the Inspectors themselves, thus keeping them in the office during many hours of the week that ought to be spent in outdoor work.

One Report under the Housing of the Working Classes Act was presented by me during the year. It was on six houses in Charles Street and one facing Friar Street in a line with the other houses. These houses had been condemned to destruction for the improvement of Charles Street, but much delay had taken place and the houses were inhabited to the great risk of the health of the occupants. The owners demolished the houses without any further action being taken.

After the statistical Tables is the Report of the Sanitary Inspector for the year, which presents no special features that call for remark.

I remain, Gentlemen,
Your obedient Servant,
MABYN READ,
M.D. and D.P.H. (Cantab.),
Medical Officer of Health.

March 26th, 1897.

Table I.—*DEATHS REGISTERED FROM ALL CAUSES during the year 1896.*

NOTE.—The Deaths of Non-Residents occurring in Public Institutions situated in the District are excluded, and the Deaths of Residents occurring in Public Institutions situated beyond the limits of the District are included.

	AGES.											Totals.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	
I. Specific Febrile, or Zymotic Diseases	33	63	20	3	1	3	1	...	3	2	...	129
II. Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
III. Dietic Diseases	...	...	...	...	...	2	...	1	...	...	...	3
IV. Constitutional Diseases	21	10	11	12	9	15	16	18	8	1	2	123
V. Developmental Diseases	37	...	...	...	...	...	...	1	21	21	14	94
VI. Local Diseases	76	42	16	11	16	25	49	49	69	33	7	393
VII. Deaths from Violence	6	6	2	5	1	2	2	4	3	1	1	33
VIII. Deaths from Ill-Defined and Not Specified Causes	42	4	...	1	1	2	...	1	1	...	...	52
Totals	215	125	49	32	28	49	68	74	105	58	24	827
I.—Specific Febrile, or Zymotic Diseases.												
1.—Miasmatic Diseases.												
Smallpox... Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox... Unvaccinated	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox... No Statement	...	...	...	...	...	...	...	...	...	...	...	...
Measles	5	22	1	...	...	...	...	...	...	...	...	28
Scarlet Fever	...	...	2	1	...	...	...	...	...	...	...	3
Typhus	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	4	3	...	...	...	...	...	...	...	...	...	7
Diphtheria	...	34	15	...	...	...	...	...	...	...	...	49
Simple Continued and Ill-defined Fever	...	...	...	...	...	...	...	...	...	...	...	...
Enteric or Typhoid Fever	...	...	1	1	1	1	...	...	...	...	...	4
Other Miasmatic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	...	...	1	...	...	...	...	...	3	1	...	5
2.—Diarrhœal Diseases.												
Simple Cholera	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery	23	4	...	...	...	...	...	...	...	...	...	27
3.—Malarial Diseases.												
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...
4.—Zoogenous Diseases.												
Cowpox and effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases (*e.g.*, Hydrophobia, Glanders, Splenic Fever)	...	...	...	...	...	...	...	...	...	...	...	...
5.—Venereal Diseases.												
Syphilis	1	...	...	...	...	...	1	...	...	...	...	2
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	...
6.—Septic Diseases.												
Erysipelas	...	...	...	...	...	1	...	...	...	1	...	2
Pyæmia, Septicæmia	...	...	...	1	...	...	...	...	...	...	...	1
Puerperal Fever	...	...	...	...	...	1	...	...	...	...	...	1
II.—Parasitic Diseases.												
Thrush, and other Vegetable Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
Worms, Hydatids, and other Animal Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
III.—Dietic Diseases.												
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Alcoholism	...	...	...	...	...	1	...	1	...	...	...	2
Delirium Tremens	...	...	...	...	...	1	...	...	...	...	...	1
IV.—Constitutional Diseases.												
Rheumatic Fever, Rheumatism of the Heart	...	...	1	...	...	...	...	...	...	...	...	1
Rheumatism	...	...	...	1	...	1	...	...	...	...	...	2
Gout	...	...	...	...	...	1	...	1	...	...	...	2
Rickets	...	...	...	...	...	...	...	...	...	...	...	...
Cancer, Malignant Disease	...	...	...	...	...	2	6	13	4	1	2	28
Tabes Mesenterica	13	2	...	...	...	...	...	...	...	...	...	15
Tubercular Meningitis, Hydrocephalus	1	3	4	1	...	...	...	...	...	...	...	9
Phthisis	2	3	2	7	8	10	9	3	2	...	...	46
Other forms of Tuberculosis, Scrofula...	5	2	4	3	1	1	...	...	...	...	...	16
Purpura, Hæmorrhagic Diathesis	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Chlorosis, Leucocythæmia	...	...	...	...	...	...	1	...	1	...	...	2
Glycosuria, Diabetes Mellitus	...	...	...	...	...	...	...	1	1	...	...	2
Other Constitutional Diseases	...	...	...	...	...	...	...	...	...	...	...	...
V.—Developmental Diseases.												
Premature Birth	34	...	...	...	...	...	...	...	...	...	...	34
Atelectasis	...	...	...	...	...	...	...	...	...	...	..	...
Congenital Malformations	3	...	...	...	...	...	...	...	...	...	...	3
Old Age	...	...	...	...	...	...	...	1	21	21	14	57
VI.—Local Diseases.												
1.—Diseases of Nervous System.												
Inflammation of Brain or Membranes	6	5	1	...	...	...	1	...	2	...	...	15
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	...	...	...	...	...	3	5	9	16	13	2	48
Insanity, General Paralysis of the Insane	...	...	...	2	3	3	...	...	...	...	...	8
Epilepsy	...	2	...	...	...	...	...	...	...	...	...	2
Convulsions	7	5	...	1	...	...	...	...	...	...	...	13
Laryngismus Stridulus (Spasm of Glottis)	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Nervous System	...	...	...	...	...	...	...	...	...	...	...	...
2.—Diseases of Organs of Special Sense (*e.g.*, of Ear, Eye, Nose)	2	...	...	...	...	...	...	...	...	...	...	2
3.—Diseases of Circulatory System.												
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...
Acute Endocarditis	...	...	1	...	...	...	...	...	...	...	...	1
Valvular Diseases of Heart	...	...	...	...	2	4	1	3	1	1	...	12
Other Diseases of Heart	...	2	3	...	2	4	13	5	18	9	2	58
Aneurism	...	...	...	...	1	...	...	...	...	...	...	1
Embolism, Thrombosis	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Blood Vessels	...	...	...	...	...	...	...	...	...	...	1	1
4.—Diseases of Respiratory System.												
Laryngitis	...	2	...	...	...	..	...	...	...	...	...	2
Croup	...	3	2	...	...	...	...	...	..	...	...	5
Emphysema, Asthma	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis	18	4	2	...	...	2	4	10	10	6	2	58
Pneumonia	11	11	2	3	1	1	9	1	4	1	...	44
Pleurisy	...	...	...	...	1	1	...	...	...	...	...	2
				1		1						3

	AGES.											Totals.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	
5.—Diseases of Digestive System.												
Dentition	3	2	...	...	...	...	...	...	...	...	...	5
Sore Throat, Quinsy	...	1	...	...	...	...	...	...	...	...	...	1
Diseases of Stomach	2	1	1	...	...	1	1	1	1	...	...	8
Enteritis	19	3	1	...	1	...	1	2	1	...	...	28
Obstructive Diseases of Intestine	...	...	...	...	...	1	3	2	...	...	...	6
Peritonitis	1	...	1	1	...	...	...	...	...	...	...	3
Ascites	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver	...	...	...	...	...	2	2	3	4	...	...	11
Jaundice and other Diseases of Liver	1	...	1	...	1	2	2	4	2	...	...	13
Other Diseases of Digestive System	...	...	...	...	...	...	...	1	1	...	...	2
6.—Diseases of Lymphatic System (*e.g.*, of Lymphatics and of Spleen)	...	...	...	...	...	...	...	...	...	...	...	...
7.—Diseases of Gland-like Organs of Uncertain Use (*e.g.*, Bronchocele, Addison's Disease)	...	...	...	1	...	...	...	1	...	...	...	2
8.—Diseases of Urinary System.												
Nephritis	3	1	...	...	1	...	4	3	2	...	...	14
Bright's Disease, Albuminuria	...	...	...	1	1	...	1	2	1	...	...	6
Disease of Bladder or of Prostate	...	...	...	...	...	...	1	...	2	2	...	5
Other Diseases of the Urinary System	...	...	...	...	...	...	1	...	...	...	...	1
9.—Diseases of Reproductive System.												
A. *Of Organs of Generation.*												
Male Organs	...	...	...	...	...	...	...	1	...	1	...	2
Female Organs	...	...	...	...	...	...	...	1	...	...	...	1
B. *Of Parturition.*												
Abortion, Miscarriage	...	...	...	...	1	...	...	...	...	...	...	1
Puerperal Convulsions	...	...	...	...	1	...	...	...	...	...	...	1
Placenta prævia, Flooding	...	...	...	...	...	...	...	...	...	...	...	...
Other Accidents of Child Birth	...	...	...	...	...	...	...	...	...	...	...	...
10.—Diseases of Bones and Joints.												
Caries, Necrosis	...	...	...	1	...	...	...	1	1	...	...	3
Arthritis, Ostitis, Periostitis	1	...	...	...	...	...	...	...	...	...	...	1
Other Diseases of Bones and Joints	...	...	...	...	...	...	...	...	...	...	...	...
11.—Diseases of Integumentary System.												
Carbuncle, Phlegmon	...	...	1	...	...	...	...	...	...	...	...	1
Other Diseases of Integumentary System	1	...	...	...	...	...	...	...	2	...	...	3
VII.—Deaths from Violence.												
1.—Accident or Negligence.												
Fractures and Contusions	1	1	1	2	1	1	...	1	3	1	1	13
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	1	...	...	...	...
Burn, Scald	1	3	1	1	...	...	1	...	...	...	...	7
Poison	...	...	...	...	...	...	...	...	...	...	...	...
Drowning	...	1	...	1	...	...	1	1	...	...	...	4
Suffocation	3	...	...	...	...	...	...	...	...	...	...	3
Otherwise	1	...	...	...	...	...	...	...	...	...	...	1
2.—Homicide.												
Manslaughter	...	1	...	...	...	...	...	...	...	...	...	1
Murder	...	...	...	...	...	...	...	...	...	...	...	...
3.—Suicide.												
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	1	...	...	...	...	...	1
Poison	...	...	...	1	...	...	...	1	...	...	...	2
Drowning	...	...	...	...	...	...	...	...	...	...	...	...
Hanging	...	...	...	...	...	...	...	1	...	...	...	1
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...
4.—Execution.												
Hanging	...	...	...	...	...	...	...	...	...	...	...	...
VIII.—Deaths from Ill-defined and not Specified Causes.												
Dropsy	41	4	...	...	...	...	...	...	...	...	...	45
Debility, Atrophy, Inanition	...	...	...	...	...	...	...	...	...	...	...	...
Mortification	...	...	...	...	...	1	...	...	...	...	...	1
Tumour	...	...	...	...	...	...	...	...	...	...	...	...
Abscess	...	...	...	1	...	...	...	1	...	...	...	2
Hæmorrhage	1	...	...	...	...	...	...	...	...	...	...	1
Sudden Death (cause not ascertained)	...	...	...	...	...	...	...	...	...	...	...	...
Causes not Specified or Ill-defined	...	...	...	...	1	1	...	...	1	...	...	3

SUMMARY OF TABLE III.

	No. of Deaths		No. of Deaths
I.—Specific Febrile, or Zymotic Diseases.		*Brought forward*	701
1. Miasmatic Diseases	96	**VI.—Local Diseases—continued.**	
2. Diarrhœal ,,	27	6. Diseases of Lymphatic System	...
3. Malarial ,,	...	7. Diseases of Gland-like Organs of Uncertain Use	2
4. Zoogenous ,,	...	8. Diseases of Urinary System	26
5. Venereal ,,	2	9. Diseases of Reproductive System—	
6. Septic ,,	4	(*a*). Diseases of Organs of Generation	3
II.—Parasitic Diseases	...	(*b*). Diseases of Parturition	2
III.—Dietic Diseases	3	10. Diseases of Bones and Joints	4
IV.—Constitutional Diseases	123	11. Diseases of Integumentary System	4
V.—Developmental Diseases	94	**VII.—Violence.**	
VI.—Local Diseases.		1. Accident or Negligence	28
1. Diseases of Nervous System	86	2. Homicide	1
2. Diseases of Organs of Special Sense	2	3. Suicide	4
3. Diseases of Circulatory System	73	4. Execution	...
4. Diseases of Respiratory System	114	**VIII.—Ill-defined and not specified causes**	52
5. Diseases of Digestive System	77		
Carried forward	701	Total	827

TABLE II.

AGE AND SEX DISTRIBUTION OF DEATHS FOR EACH MONTH OF THE YEAR 1896.

		January	February	March	April	May	June	July	August	September	October	November	December	Total.	
Under 1 year	Male ...	11	7	4	8	11	5	14	14	6	17	11	8	116	215
	Female...	5	5	6	6	7	5	10	18	8	10	7	12	99	
1 to 5 years	Male ...	5	3	2	5	3	5	10	7	2	4	6	2	54	125
	Female...	7	1	4	2	7	8	7	12	10	4	6	3	71	
5 to 65 years	Male ...	17	5	11	9	13	13	16	9	11	16	15	8	143	290
	Female...	17	12	12	6	18	10	11	14	9	12	15	11	147	
Over 65 years	Male ...	9	2	5	5	11	3	1	11	5	9	9	13	83	181
	Female...	11	16	12	5	13	6	5	4	5	4	9	8	98	
Totals ...		82	51	56	46	83	55	74	89	56	76	78	65	M. 396 F. 415	811

N.B.—This Table does not include the 16 deaths that took place in Powick Asylum.

TABLE III.

DEATHS AND BIRTHS OCCURRING IN PARISHES.

Parish.	Population estimated	Total Deaths.	Death-rate.	Births.	Deaths under 1 year.	Infantile Death-rate.
All Saints ...	1809	58	32·0	60	20	333
St. Andrew...	1175	35	29·7	41	8	195
St. Swithin ...	558	7	12·5	12	4	333
Blockhouse...	2202	51	23·1	82	10	121
St. Helen ...	945	25	26·4	46	10	243
St. Michael ...	444	8	18·0	8	1	125
St. Alban ...	153	1	6·5	6	1	166
College Precincts...	129	...	...	...	...	...
St. Nicholas..	1800	30	16·6	31	7	225
Whistones ...	2862	54	18·8	67	16	238
St. John	4700	72	15·3	139	14	100
St. Clement...	2107	48	22·7	74	13	175
South Hallow	486	5	10·2	12	...	...
St. Martin ...	4665	99	21·2	148	22	148
St. Peter	8200	145	17·6	243	47	193
South Claines	12,000	173	14·3	343	42	122
Worcester ...	**44,250**	**827**	**18·6**	**1312**	**215**	**163**

TABLE IV.

Analysis of Deaths occurring in Parishes.

Parish.	Male.	Female.	Total.	Age.			
				Under 1 year.	1—5 years.	5—65 years.	Over 65 years.
All Saints.........	32	26	58	20	8	20	10
St. Andrew	16	19	35	8	7	15	5
St. Swithin	4	3	7	4	1	2	...
Blockhouse	28	23	51	10	16	15	10
St. Helen	15	10	25	10	3	7	5
St. Michael	1	7	8	1	...	2	5
St. Alban	1	...	1	1	...	...	...
College Precincts	...	...	...	...	...	...	...
St. Nicholas	8	22	30	7	2	10	11
Whistones.........	24	30	54	16	1	21	16
St. John............	30	42	72	14	7	29	22
St. Clement	23	25	48	13	15	15	5
South Hallow ...	2	3	5	...	1	3	1
St. Martin.........	51	48	99	22	18	36	23
St. Peter	74	71	145	47	20	52	26
South Claines ...	85	88	173	42	26	66	39

TABLE V.

BIRTH-RATE AND DEATH-RATE OF 1896, COMPARED WITH THE RATES OF THE PRECEDING TEN YEARS.

Year.	Population.	Natural Increase	Registered Births.	Birth-rate.	Total Deaths.	Death-rate.	Deaths under 1 year.	Infantile Death-rate.	Deaths under 5 years.	Deaths from the seven principal Zymotics	Zymotic Death-rate.
1886	41,710	416	1356	30·	940	22·4	293	217·	357	79	1·8
1887	41,965	452	1378	32·	926	22·6	273	196·	359	77	1·8
1888	42,220	515	1321	31·3	806	18·9	224	169·5	317	93	2·3
1889	42,462	565	1332	31·5	767	18·1	218	163·	264	46	1·3
1890	42,715	378	1256	29·4	878	20·6	225	179·	281	59	1·4
1891	42,950	341	1273	29·6	932	21·6	269	208·	397	124	2·8
1892	43,195	293	1267	29·3	974	22·5	209	164·	277	57	1·3
1893	43,480	408	1244	28·6	836	19·2	207	166·	285	92	2·1
1894	43,735	577	1295	29·6	718	16·4	183	141·3	266	57	1·3
1895	43,994	425	1365	31·02	940	21·3	259	189·	352	96	2·18
	Average of preceding 10 years...	437	1308	29·5	871	19·6	236	180·	315	78	1·7
1896	**44,250**	**485**	**1312**	**29·6**	**827**	**18·6**	**215**	**163·**	**340**	**118**	**2·6**

TABLE OF DEATHS DURING THE YEAR 1896 REGISTERED in the CITY OF WORCESTER, classified according to Diseases, Ages, and Localities.

These Tables are made at the request of the Local Government Board, on forms supplied by them.

Names of Localities.	Mortality from all causes, at subjoined Ages.								Mortality from subjoined causes, distinguishing Deaths of Children under Five Years of Age.																							
													Fevers.																		
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea & Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Influenza.	Injuries.	All Other Diseases.	Total.
City of Worcester	715	207	112	37	22	178	159	Under 5			26	3								27	7	26		5	41	2		10	172	319
								5 upwds.		2	6	2		2					1	1			1	40	53	64	5	12	207	396
Workhouse	37	5	1		3	13	15	Under 5														1			1				4	6
								5 upwds.																1	5	5			20	31
General Infirmary	67	3	5	7	12	26	14	Under 5			1														2			2	3	8
								5 upwds.						2			1		1					2	2	1		14	36	59
Barbourne Hospital......	17		7	9	1			Under 5			7																			7
								5 upwds.		1	9																			10
Totals......	836	215	125	53	38	217	188	Under 5			34	3								27	7	27		5	44	2		12	179	340
								5 upwds.		3	15	2		4			1		2	1			1	43	60	70	5	26	263	496
The subjoined numbers have also to be taken into account in judging of the above records of mortality.																															
Deaths occurring outside the district among persons belonging thereto...	16				1	9	6	Under 5																						
								5 upwds.																		1			15	16
Deaths occurring within the district among persons not belonging thereto ...	25			4	7	7	7	Under 5																						
								5 upwds.																2				5	18	25

TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS classified according to Diseases, Ages, and Localities.

This Table is made at the request of the Local Government Board, on forms supplied by them.

Names of Localities.	Population at all Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.											Number of such cases removed from their homes in the several localities for treatment in Isolation Hospital.				
									Fevers.											
	Census 1891.	Estimated to middle of 1896.			Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Con-tinued.	Relaps-ing.	Puer-peral.	Cholera.	Erysipelas.	Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Enteric or Typhoid.
City of Worcester............	42,908	44,250	1,312	Under 5		109	95										13	38		
				5 upwds.	4	185	219	3		18			5		44	4	40	98		1
General Infirmary............				Under 5											1					
				5 upwds.		1	2								2					
Workhouse				Under 5																
				5 upwds.			1								1			1		
Totals............				Under 5		109	95								1		13	38		
				5 upwds.	4	186	222	3		18			5		47	4	40	99		1

TABLE VI.

DEATHS FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES IN 1896, COMPARED WITH THE PRECEDING TEN YEARS.

Year.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.			Diarrhœa.	TOTAL.
						Typhus.	Typhoid.	Continued.		
1886......	...	6	9	2	11	...	15	...	37	79
1887......	...	19	1	3	13	...	8	...	33	77
1888......	...	30	7	3	11	...	5	...	37	93
1889......	...	...	2	3	1	...	7	...	33	46
1890......	...	2	4	2	5	...	10	...	36	59
1891......	...	32	...	2	60	1	8	...	21	124
1892......	...	1	2	11	5	...	14	1	23	57
1893......	1	19	4	9	6	...	9	...	44	92
1894......	2	27	1	7	...	...	3	...	17	57
1895......	...	...	1	7	55	...	3	...	30	96
Average of the preceding ten years	·3	13·6	3·1	4·9	16·7	...	8·2	...	31·1	78
1896.........	...	**28**	**3**	**49**	**7**	...	**4**	...	**27**	**118**

Report of the Sanitary Inspector for the Year 1896.

TO THE URBAN SANITARY AUTHORITY OF THE CITY OF WORCESTER.

Gentlemen,

I have the honour to present my Report for the year 1896. Owing to the great number of cases of infectious diseases notified during the year a corresponding increase of work has been thrown upon this department.

As in past years I have again to express my thanks to the Owners and Agents of properties for the ready way in which they have co-operated with me in my endeavours to abate nuisances and maintain the City in a healthy condition. The epidemic of Diphtheria, of which your Medical Officer of Health will no doubt give an exhaustive report, did not appear due to any want of sanitary conditions, as in the majority of cases the disease was not found in the parts of the City where insanitary conditions are more likely to occur.

By the kind permission of the Council I was appointed a delegate to the Sanitary Conference at Newcastle-on-Tyne in September. The interchange of views on sanitary work and the mode of operations adopted by the various

Authorities throughout the country I found most interesting. The lectures, given by the most prominent sanitarians of the day, I attended, and, I hope, derived much benefit and an increase of knowledge of such subjects as otherwise would have been out of my power to attain.

The visits to the different works where the latest sanitary appliances are manufactured were not only interesting in themselves, but of practical utility in my work as Inspector here. I take this opportunity of thanking the Council for their confidence in me in appointing me as their representative.

The following is an account of the sanitary and other work carried out during the year:—

Filthy or Dilapidated Dwellings.—Three hundred and eighty have been dealt with in the year. These are mostly discovered by the house to house visitation, which is made periodically in the poorer and older parts of the City. In no case has an appeal had to be made to the magistrates to enforce the law. Owners have not always been in fault, as the tenants in many cases are to blame for the way in which they use, or rather abuse the houses they live in.

Overcrowded Dwellings.—Thirty-five cases of this kind have been found out and the usual course adopted to abate the nuisances. As I said in a previous report the want of small cottages with two good bedrooms at a reasonable rent is much felt in Worcester.

Foul or Defective Drains.—Three hundred and thirty have been inspected and the faults rectified. This class of nuisance is always recurring, owing in many cases to the abuse of the commonest sanitary laws by the tenants; the want of cleanliness and flushing being the principal faults.

Drains inside Dwellings.—These are practically done away with, a few are left owing to the impossibility of getting them outside, but precautions have been taken to have them trapped with the very best kind of traps.

Privy Cess Pits.—These are decreasing every year. Twenty-one have been converted into W.Cs. Those remaining are in open places at a distance from dwellings, or the premises cannot be drained into any existing sewer.

Ashpits.—These are getting fewer in number each year, occupiers are realizing the advantage of having their refuse removed by the carts every week. 2,942 loads of night soil and ashes have been removed during the twelve months past.

Dilapidated Privies or W.Cs.—Two hundred and twenty-eight of these have been dealt with and the necessary repairs carried out.

Accumulations of Manure, &c.—Only a few cases of nuisances coming under this head have been found, and prompt measures taken for their abatement.

Miscellaneous Nuisances.—Seventy-eight of these have been dealt with under the following heads:—Swine kept within 50 feet of dwellings; Animals kept so as to be a nuisance, &c.

Disinfection of Houses.—Over 400 houses have been disinfected by us during the year, and nearly the same number have been cleansed, repapered, and ceilings whitened.

In no single case have the Owners failed in carrying out the work set out in the notices sent.

Food and Drugs Act, 1875-1879.—The following samples have been taken, and the results are as follows :—

MILK.—-Twenty-seven samples were taken, of which 24 were found genuine, and 3 adulterated. In the latter cases fines of 21s., 20s., and £2, with costs in each instance, were inflicted by the Magistrates.

BUTTER.—Seventeen samples were taken, and all found genuine.

PEPPER.—Three samples, all genuine.

COFFEE.—1 sample adulterated. A fine of 5s. and costs was inflicted by the Magistrates.

Twelve samples of well water were also analysed, eight were polluted and the wells closed. Four were pure.

Dairies, Cowsheds and Milkshops.—Periodical visits of inspection are paid to ascertain if the premises are in proper order.

Slaughter Houses.—These are inspected weekly and as a rule are well kept. Notices for whitewashing are sent round every three months. I find the private ones are more frequently done.

Common Lodging Houses.—The same number are still in existence. They are inspected weekly and whitewashed throughout twice yearly. An application for a license of a house in Dolday to be used as a Common Lodging House was made, but was withdrawn when it was found that considerable alterations were necessary before the Committee would grant the license.

Canal Boats.—A general inspection is made at the wharves and on the waterways. I have found them, with few exceptions, excellently kept. Fewer women and children are now carried on board. During the epidemic of Smallpox at Gloucester a daily watch was kept at the locks, but no case was imported into the City by this means.

Shop Hours Act, 1892.—I have had no occasion to report any shopkeepers for a breach of the Act, nor have I had any complaint from employees.

In conclusion, I would express my sincere thanks to the Medical Officer of Health for the valuable assistance I have received from him in carrying out my duties and to the Assistant Inspector, Mr. James Sheppard, for the zeal he shews and his readiness to carry out all instructions. From the Health Committee I have received every consideration in the discharge of the duties of my office.

I am, Gentlemen,
Your obedient Servant,
W. PACY.

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